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## PROCEEDINGS.

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Seven hundred and twelfth Meeting.

May 28, 1878. — ANNUAL MEETING.

The PRESIDENT in the chair.

The Reports of the Corresponding Secretary, of the Librarian, and of the Treasurer were read.

On the motion of Professor Cooke, it was

*Voted*, That, when the Academy adjourn, it adjourn to the second Wednesday in June.

*Voted*, That a committee of ways and means be appointed to report, at the adjourned meeting, what appropriations can be safely made for the ensuing year.

The committee was constituted as follows: The Treasurer, the Corresponding Secretary, the Librarian, Professor Lovering, and Mr. Agassiz.

The chairman of the Rumford Committee read his annual report, and also presented the following vote: —

“At a meeting of the Rumford Committee, held May 24, it was

“*Voted*, To recommend to the Academy the appropriation of three hundred dollars (\$300) to Professor Young, of Princeton, in aid of his observations of the solar eclipse of 29th July, 1878.”

The annual election resulted in the choice of the following officers: —

CHARLES F. ADAMS, *President*.

JOSEPH LOVERING, *Vice-President*.

JOSIAH P. COOKE, JR., *Corresponding Secretary*.

JOHN TROWBRIDGE, *Recording Secretary*.

THEODORE LYMAN, *Treasurer*.

SAMUEL H. SCUDDER, *Librarian*.

*Council.*

EDWARD C. PICKERING, }  
 JAMES M. PEIRCE, } of Class I.  
 JOHN M. ORDWAY, }

BENJ. E. COTTING, }  
 ASA GRAY, } of Class II.  
 ALEXANDER AGASSIZ, }

CHARLES E. NORTON, }  
 ROBERT C. WINTHROP, } of Class III.  
 BENJ. F. THOMAS, }

*Rumford Committee.*

WOLCOTT GIBBS.                      STEPHEN P. RUGGLES.  
 EDWARD C. PICKERING.      JOHN TROWBRIDGE.  
 JOHN M. ORDWAY.              JOSIAH P. COOKE, JR.  
                                  JOSEPH LOVERING.

*Member of Finance Committee.*

THOMAS T. BOUVÉ.

The Hon. Robert C. Winthrop presented the nomination book of the Academy of 1819.

On the motion of Professor Cooke, it was

*Voted*, That the thanks of the Academy be presented to Mr. Winthrop for the care he has taken in the preservation of Count Rumford's tomb, at Paris.

The following gentlemen were elected members of the Academy:—

Jacob Georg Agardh, of Lund, to be a Foreign Honorary Member in Class II., Section 2, in place of the late Elias Magnus Fries.

William Elwood Byerly, of Cambridge, to be a Resident Fellow in Class I., Section 1.

Charles Follen Folsom, of Boston, to be a Resident Fellow in Class II., Section 4.

## Seven hundred and thirteenth Meeting.

June 12, 1878. — ADJOURNED ANNUAL MEETING.

Professor ASA GRAY was elected President *pro tempore*.

The Committees on Publication and on the Library were reappointed by the chair.

The committee on ways and means, through their chairman, Mr. Theodore Lyman, recommended the following appropriations for the ensuing year: —

For the Library . . . . .	\$500
For publishing . . . . .	1,000

The appropriations were voted by the Academy.

On the motion of Professor Cooke, it was

*Voted*, That the rule of the Academy which furnishes a member one hundred extra copies of his paper be suspended for the ensuing year; and also, that all charges for correcting composition, over ten per cent, be charged to the author.

Mr. Scudder moved that the Academy take part in the proposed catalogue of periodical publications to be issued by the Librarian of Harvard College. No action was taken by the Academy.

The following papers were presented: —

“On the Embryology of the Gar Pike.” By Alexander Agassiz.

“On a New Form of Electro-Dynamometer.” By John Trowbridge.

“On Standard Measures.” By William A. Rogers.

“On the Action of Bromine on Toluol and some of its Derivatives.” By C. Loring Jackson and A. W. Field.

The following papers were presented by title: —

“On a Modification of Regnault’s Air-Thermometer.” By Josiah P. Cooke, Jr.

“On the Boiling Point of Iodide of Antimony.” By Josiah P. Cooke, Jr. and W. C. Bennet.

“On Two New Forms of Micrometers.” By Edward C. Pickering.

## Seven hundred and fourteenth Meeting.

October 9, 1878. — STATED MEETING.

The PRESIDENT in the chair.

The following gentlemen were elected members of the Academy:—

James Barr Ames, of Cambridge, to be a Resident Fellow in Class III., Section 1.

John Chipman Gray, Jr., of Boston, to be a Resident Fellow in Class III., Section 1.

E. D. Leavitt, Jr., of Cambridge, to be a Resident Fellow in Class I., Section 4.

John Phillips Reynolds, of Boston, to be a Resident Fellow in Class II., Section 4.

Charles Sprague Sargent, of Brookline, to be a Resident Fellow in Class II., Section 2.

Thomas Carlyle, of London, to be a Foreign Honorary Member in Class III., Section 3, in place of the late Louis Adolphe Thiers.

H. A. J. Munro, of Cambridge, to be a Foreign Honorary Member in Class III., Section 2, in place of the late Count Paul Federigo Sclopis di Salerano.

John Ruskin, of Oxford, to be a Foreign Honorary Member in Class III., Section 4.

On the motion of Professor Cooke, it was

*Voted*, That, when this meeting adjourn, it adjourn to the second Wednesday in November, in order to vote upon nominations; and that the next meeting be an adjourned stated meeting.

The chair appointed Messrs. Lovering, Cooke, and Pickering to collect, sort, and count votes for a vacancy in the Council. Professor James B. Thayer was elected to fill the vacancy caused by the death of Judge Thomas.

The following papers were presented:—

“On the Limits of Accuracy in Measurements with the Microscope.” By William A. Rogers.

“On a Standard Inch and a Standard Centimetre.” By William A. Rogers.

“On Electric Lights and Methods of Testing the Strength of the Currents which produce them.” By John Trowbridge.

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**Seven hundred and fifteenth Meeting.**

November 13, 1878. — ADJOURNED STATED MEETING.

The PRESIDENT in the chair.

Professor Lovering reported from the Rumford Committee, that the funds appropriated to Professor C. A. Young, at the Annual Meeting, had not been required. He also presented two papers on the Sun, by Professor Langley, which were referred to the Publishing Committee.

Professor Lovering also presented the following report of the Rumford Committee: —

“*Voted*, To recommend to the Academy to appropriate from the income of the Rumford Fund, one hundred dollars (\$100), to aid Mr. W. W. Jacques, of the Johns Hopkins University, in continuing his experiments on the distribution of heat in the spectrum.”

The appropriation was voted.

The following gentlemen were elected members of the Academy: —

William Sumner Appleton, of Boston, to be a Resident Fellow in Class III., Section 2.

Henry Van Brunt, of Cambridge, to be a Resident Fellow in Class III., Section 4.

Henry Cabot Lodge, of Boston, to be a Resident Fellow in Class III., Section 3.

Henry Hobson Richardson, of Brookline, to be a Resident Fellow in Class III., Section 4.

Joseph S. Ropes, of Boston, to be a Resident Fellow in Class III., Section 3.

The following papers were presented: —

“On the Tides of the Gulf of Maine.” By Henry Mitchell.

“Researches in Telephony.” By Amos E. Dolbear.

Mr. N. D. C. Hodges, by invitation, described his new instrument for determining magnetic dip.

Professor Peirce discussed the results of Professor Mitchell's paper.

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**Seven hundred and sixteenth Meeting.**

December 11, 1878. — MONTHLY MEETING.

The PRESIDENT in the chair.

The following papers were presented : —

“On the Determination of Equipotential Curves and Surfaces by the Telephone.” By A. Graham Bell.

“On the Heat produced by the Magnetization and Demagnetization of Iron, Nickel, and Cobalt.” By John Trowbridge.

Professor Bell gave a description of various ingenious appliances of M. Trouvé, of Paris. Remarks on this subject were made by Doctors Putnam and Williams.

Mr. Scudder called attention to a catalogue of the serial publications which are taken at the chief libraries in Boston and Cambridge.

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**Seven hundred and seventeenth Meeting.**

January 8, 1879. — STATED MEETING.

The PRESIDENT in the chair.

The Corresponding Secretary read letters from Messrs. Ruskin, Carlyle, and Munro, accepting membership in the Academy.

On the motion of Mr. Winthrop, it was

*Voted*, That the chair nominate six members of the Academy who, together with himself, will constitute a committee of seven to consider the best manner of celebrating the one hundredth anniversary of the foundation of the American Academy of Arts and Sciences.

Professor Dolbear exhibited a new form of galvanometer and a new form of electric lamp.

On the motion of the Recording Secretary, it was

*Voted*, That the Academy adjourn to the second Wednesday in February, and that this meeting be an adjourned stated meeting.

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**Seven hundred and eighteenth Meeting.**

February 12, 1879. — ADJOURNED STATED MEETING.

The PRESIDENT in the chair.

Mr. S. H. Scudder was appointed Secretary *pro tempore*.

Professor Lovering reported from the Rumford Committee a recommendation that the Academy appropriate one thousand dollars (\$1,000) from the income of the Rumford Fund for investigations in light and heat, under the direction of the committee ; and it was accordingly

*Voted*, To appropriate this sum from the Rumford Fund for the above-named investigation.

Professor Pickering made a communication on the Zone Observations of Harvard College Observatory ; upon which remarks were made by Messrs. Watson and Rogers.

Professor Gray thought this a fitting opportunity for the Academy to express its satisfaction at the accomplishment of a work of such great and general utility ; and, on his motion, it was

*Voted*, That the congratulations of the Academy be extended to the Director and to the Observer, Professor William A. Rogers, on the completion of the Zone Observations assigned to the Cambridge Observatory.

Professor Gray presented the following papers : —

“Some Remarks upon American Bryology, and Descriptions of some new Species of Mosses.” By Leo Lesquereux and Thomas P. James.

“Characters of some new Genera and Species of Plants, chiefly of California and Oregon.” By Asa Gray.



Mr. N. D. C. Hodges described a new galvanometer.

Professor Shaler read a short paper on explorations in coal mines. Remarks on this paper were offered by Messrs. Watson and Ordway.

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Seven hundred and nineteenth Meeting.

March 12, 1879. — STATED MEETING.

The PRESIDENT in the chair.

The Chair named six additional members of the Centennial Committee, in accordance with the vote of the Academy at its meeting of January 8. The Committee was thus constituted as follows : —

Charles F. Adams, *Chairman*, Robert C. Winthrop, Asa Gray, John A. Lowell, Theodore Lyman, Josiah P. Cooke, Jr., and Benjamin E. Cotting.

The following papers were presented : —

“On the Degree of Reliability of Marey’s Drum for Time Experiments.” By James J. Putnam.

“On a Modified Pendulum Myograph.” By James J. Putnam.

“On the Coefficient of Expansion of the Brass Bars used by the United States Coast Survey for Standards of Length.” By William A. Rogers.

The following paper was presented by title : —

“On certain Parachlorbenzyl Compounds.” By C. L. Jackson and J. Fleming White.

The following gentlemen were elected members of the Academy : —

Edward Atkinson, of Boston, to be a Resident Fellow in Class III., Section 3.

James Freeman Clarke, of Boston, to be a Resident Fellow in Class III., Section 1.

Frank Winthrop Draper, of Boston, to be a Resident Fellow in Class II., Section 4.

Alfred Hosmer, of Watertown, to be a Resident Fellow in Class II., Section 4.

Robert H. Richards, of Boston, to be a Resident Fellow in Class I., Section 3.

Asaph Hall, of Washington, to be an Associate Fellow in Class I., Section 2.

Viscount Ferdinand de Lesseps, of Paris, to be a Foreign Honorary Member in Class I., Section 4, in place of the late Urbain-Jean-Joseph Leverrier.

Franz Cornelis Donders, of Utrecht, to be a Foreign Honorary Member in Class II., Section 4, in place of the late Karl Freiherr von Rokitanski.

Professor Bowditch moved

That the Secretary be instructed, when notifying members of a meeting of the Academy, to communicate to them the names of candidates who are to be balloted for at said meeting.

That the above motion be assigned for discussion at the next meeting of the Academy.

Remarks upon the life and services of Doctor Jacob Bigelow were made by the President and by Professor Gray.

On the motion of Professor Bowditch, it was

*Voted*, That the Academy adjourn to the second Wednesday in April, and that the meeting be an adjourned stated meeting.

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**Seven hundred and twentieth Meeting.**

April 9, 1879. — ADJOURNED STATED MEETING.

The PRESIDENT in the chair.

Professor B. Peirce read a paper on the Meteoric Constitution of the Solar System.

Professor E. C. Pickering described a new form of instrument for measuring the light of the stars.

The following papers were presented by title: —

“On the Distribution of Heat in the Spectra of Various

Substances raised to Incandescence." By W. W. Jacques, of Johns Hopkins University, Baltimore.

"On the Action of Bromine on Substituted Toluols." By Professor C. L. Jackson and Mr. A. W. Field.

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**Seven hundred and twenty-first Meeting.**

**May 14, 1879. — MONTHLY MEETING.**

The **PRESIDENT** in the chair.

The Corresponding Secretary announced that he had received letters from T. W. Draper, of Boston, R. H. Richards, of Boston, H. H. Richardson, of Brookline, Asaph Hall, of Washington, T. C. Donders, of Utrecht, and F. de Lesseps, of Paris, accepting membership in the Academy.

Mr. R. C. Winthrop read the following report from the committee appointed to consider the best manner of celebrating the centennial of the Academy:—

"The committee appointed to report a plan for the commemoration of the Centennial Anniversary of the Academy next spring, recommend that a meeting of the Academy be arranged for some day in 1880, which shall be decided on as most suitable, at which a commemorative address or addresses shall be delivered by the President and any other members who may be selected for the purpose, and that it be followed by a social festival of such nature as shall hereafter be thought best; that in the mean time efforts be made to raise a centennial fund for securing a hall for the Academy, or for such other purposes as may be thought desirable; that the Secretaries, with such assistance as they may desire, prepare a history of the foundation, rise, and progress of the Academy, to be printed in connection with the account of the Centennial Celebration; and that, for the purpose of carrying out this programme, a committee of arrangements of members be appointed by the chair, with full powers."

Dr. H. P. Bowditch described a new form of Plethysmograph.

Mr. N. D. C. Hodges read, by invitation, a paper on the Dimensions of Molecules.

Professor Pickering described a new form of Nebula Photometer.

Professor Trowbridge read two contributions from the Physical Laboratory of Harvard College, with the following titles:—

“On the Vibration of Elliptical Plates.”

“On a Method of Studying Wave Motion.”

The following papers were presented by title:—

“Characters of New Species of Plants from Mexico, collected by Dr. E. Palmer and Dr. C. C. Parry.” By Dr. Asa Gray.

“A Revision of the North American Liliaceæ, and Descriptions of some New Species of other Orders.” By Mr. Sereno Watson.

“On Complex Inorganic Acids.” By Dr. Wolcott Gibbs.

“On the Synthesis of Anthracene.” By Professor C. Loring Jackson and Mr. J. Fleming White.

The meeting then dissolved.